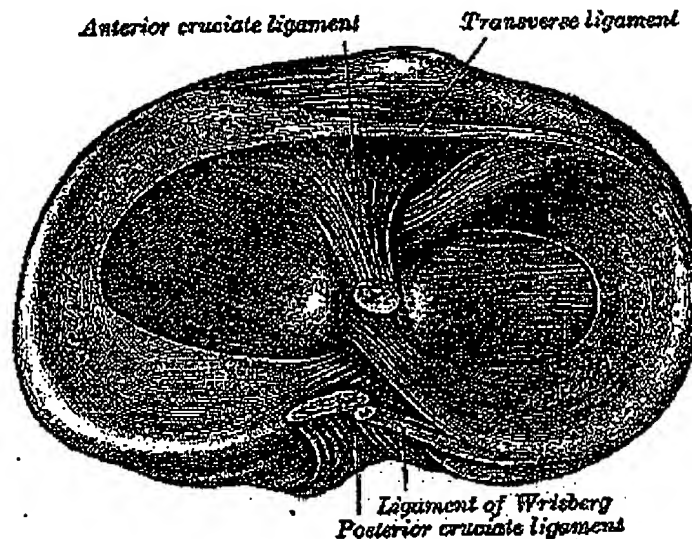


EXHIBIT A

The Menisci (*semilunar fibrocartilages*) (Fig. 349).—The menisci are two crescentic lamellæ, which serve to deepen the surfaces of the head of the tibia for articulation with the condyles of the femur. The peripheral border of each meniscus is thick, convex, and attached to the inside of the capsule of the joint; the opposite border is thin, concave, and free. The upper surfaces of the menisci are concave, and in contact with the condyles of the femur; their lower surfaces are flat, and rest upon the head of the tibia; both surfaces are smooth, and invested by synovial membrane. Each meniscus covers approximately the peripheral two-thirds of the corresponding articular surface of the tibia.

The **medial meniscus** (*meniscus medialis; internal semilunar fibrocartilage*) is nearly semicircular in form, a little elongated from before backward, and broader behind than in front; its anterior end, thin and pointed, is attached to the anterior intercondyloid fossa of the tibia, in front of the anterior cruciate ligament; its posterior end is fixed to the posterior intercondyloid fossa of the tibia, between the attachments of the lateral meniscus and the posterior cruciate ligament.

FIG. 349



Head of right tibia seen from above, showing menisci and attachments of ligaments.

Flexible MemberRadius of top $R' = 9$ mmRadius of bottom $R = 11.5$ mmHeight $H = 1.0$ mmRadius of juncture of bottom of flexible member and shaft $R'' = 7$ mmSlant height (bevel) $S = ((R-R'')^2 + H^2)^{.5} = ((11.5 - 9)^2 + (1.0)^2)^{.5} = 2.69$ mmLateral area (beveled portion) $= 3.14S(R+R') = 3.14(2.69)(11.5+9) = 173.16$ mm²Area of top $= 3.14(R')^2 = 3.14(9)^2 = 254.34$ mm²Area of bottom $= 3.14R^2 - 3.14(R'')^2 = 3.14(11.5)^2 - 3.14(7)^2 = 261.41$ mm²Volume $= 1/3(3.14)H(R^2 + (R)(R') + R'^2) = 1/3(3.14)(1.0)((11.5)^2 + (11.5)(9) + (9)^2)$
 $= 1,577.33$ mm³Total surface area: $173.16 + 254.34 + 261.41 = 849.84$ mm²Surface area to mass ratio (density term dropped out because materials identical for each of the flexible member and the shaft)Surface Area / Volume $= 849.84$ mm² / $1,577.33$ mm³ $= 0.54$ **Shaft**Cylinder: Radius $R = 6$ mmHeight $H = 68$ mmArea $= 2(3.14)rh = 2(3.14)(6)(68) = 2,562.24$ mm²Volume $= (3.14) R^2H = (3.14)(6)^2 (68) = 7,686.72$ mm³Cone: Radius $R = 6$ mmHeight $H = 11$ mmSlant Height $S = 12.5$ mmArea $= (3.14)RS = (3.14)(6)(12.5) = 235.5$ mm²Volume $= 1/3(3.14) R^2H = 1/3(3.14)(6)^2 (11) = 414.48$ mm³Total surface area: $2,562.24 + 235.5 = 2,797.74$ mm²Total volume: $7,686.72 + 414.48 = 8,101.2$ mm³Surface area to mass ratio (density term dropped out because materials identical for each of the flexible member and the shaft)Surface Area / Volume $= 2,797.74$ mm² / $8,101.2$ mm³ $= 0.34$

The surface area to mass ratio of the flexible member (0.54) is greater than the shaft (0.34).

Note: measurements were taken from Fig. 4 as filed. Fig. 4 as presented in Exhibit B is an enlarged view of Fig. 4 as filed.

EXHIBIT C

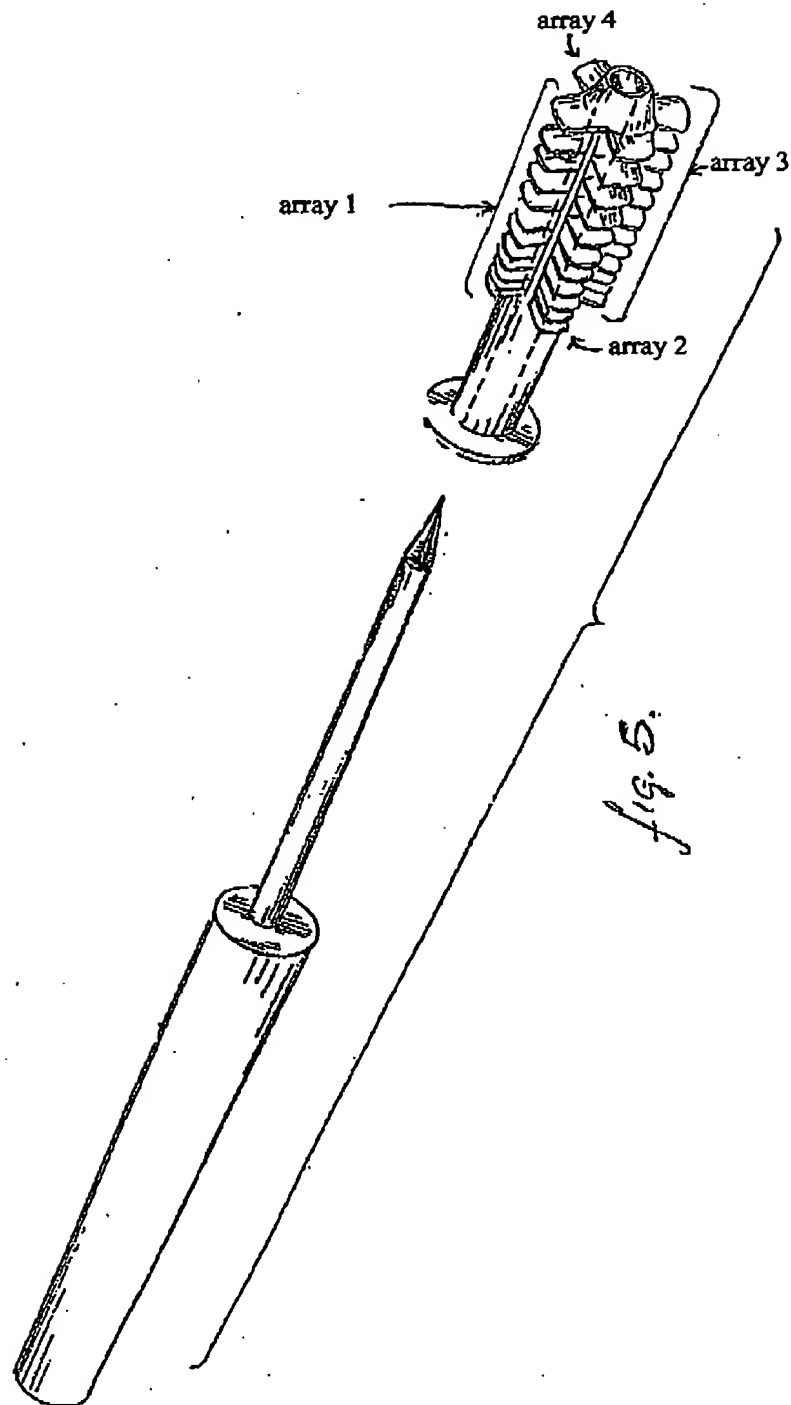


EXHIBIT D

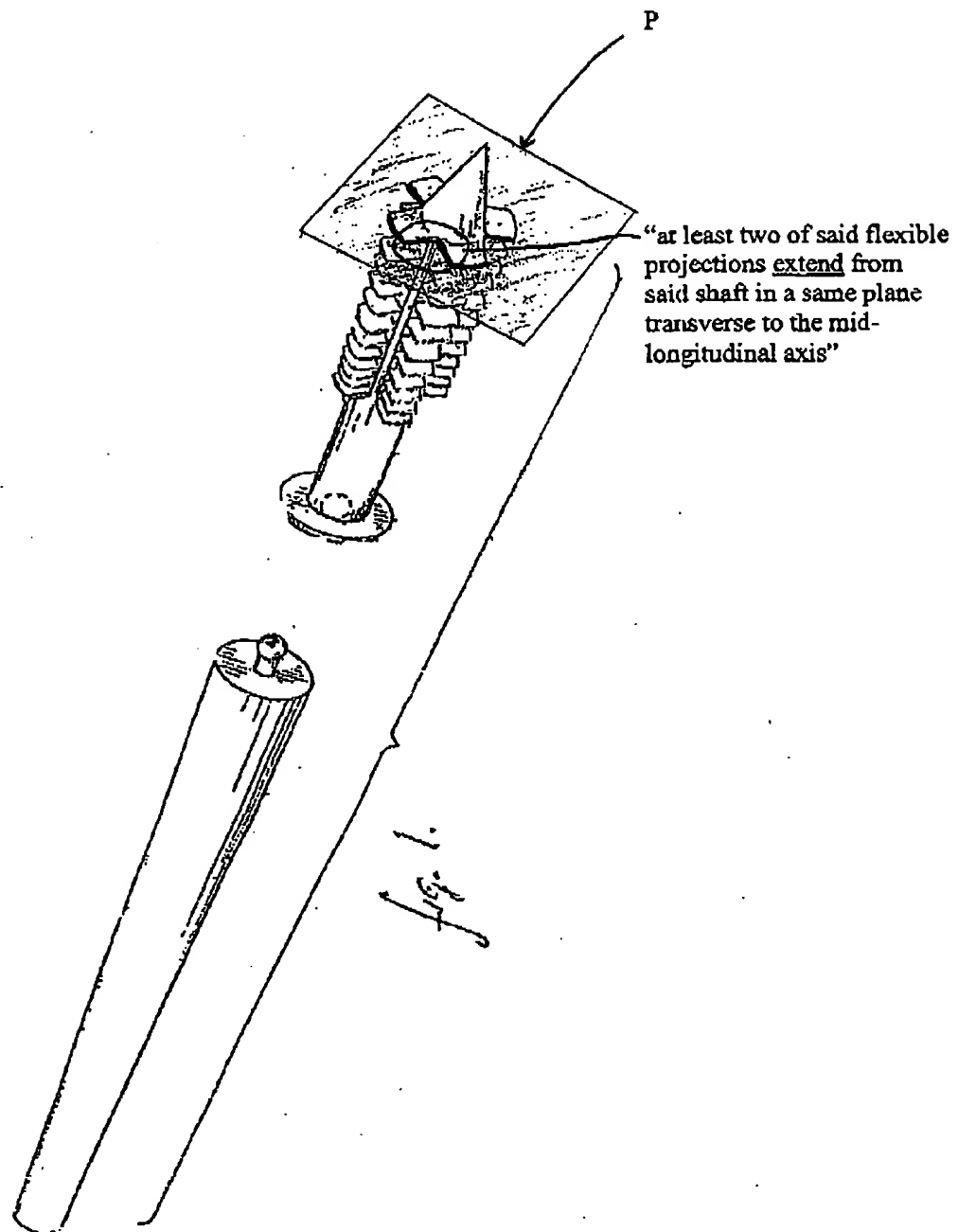
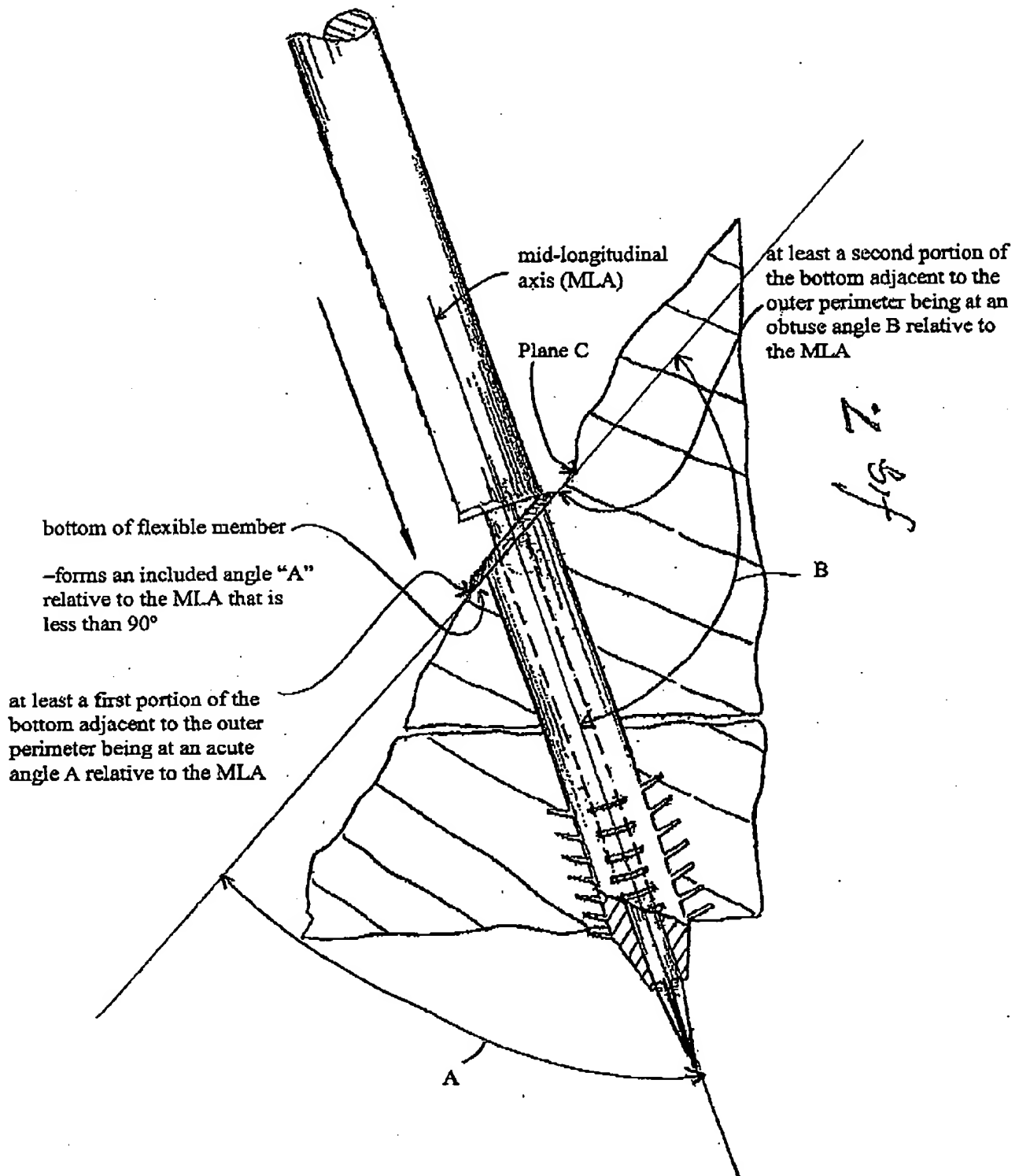
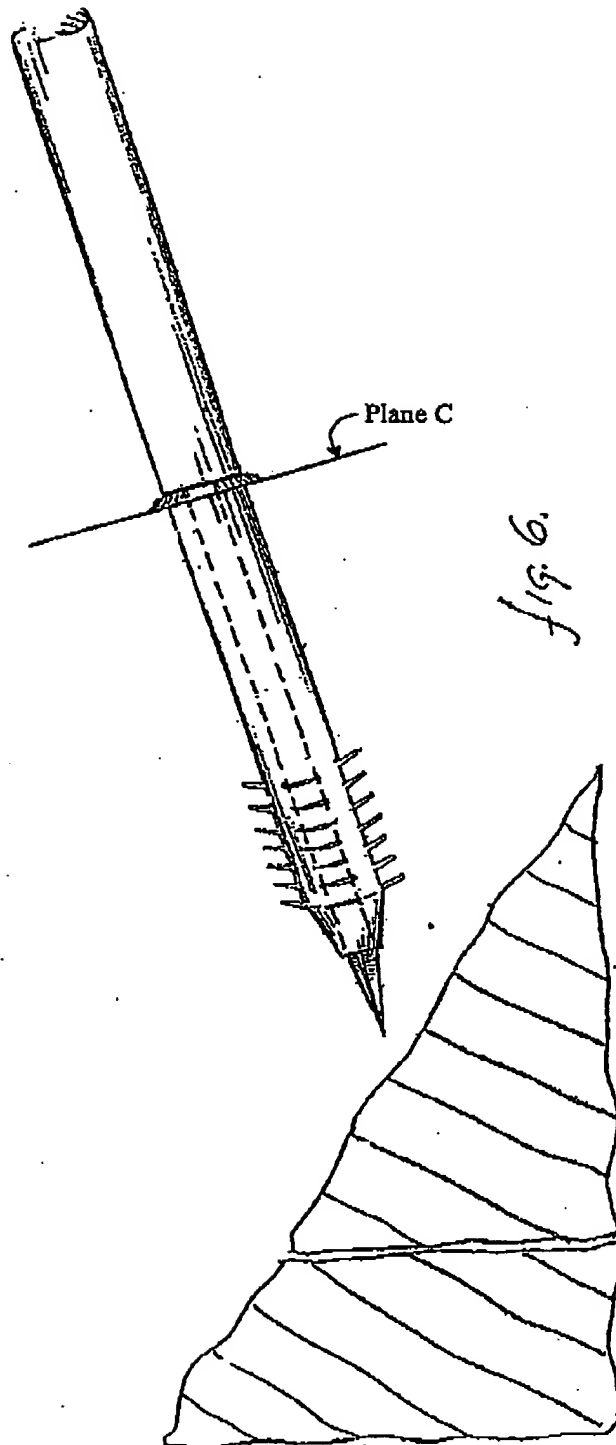


EXHIBIT F



4 5 0 0 0 0 0 0

EXHIBIT G



file • filter paper 435

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